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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 34

Application Number: 09/423,746

Filing Date: November 15, 1999

Appellant(s): FAGIOLINI ET AL.

Ms. Marina Schneller
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief dated April 16, 2003 (paper no. 32).

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that

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there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

This appeal involves claims 1, 2, 4-10, 12 and 13.

(4) *Status of Amendments After Final*

The appellants' statement of the status of amendments after final rejection contained in the brief is correct.

The 116 amendment date-stamped Nov. 02, 2001 (paper no. 11) has been entered.

The 116 amendment date-stamped Sept. 03, 2002 (paper no. 20) has been entered.

The 116 amendment date-stamped Sept. 18, 2002 (paper no. 23) has been entered.

The 116 amendment date-stamped Apr. 16, 2003 (paper no. 30) has been entered.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

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(6) Issues

The appellants' statement of the issues in their brief is essentially correct.

However, the rejection of claim 13 under the second paragraph of 35USC112 has been dropped.

(7) Grouping of Claims

Appellant's brief includes a statement that claim 13 does not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) ClaimsAppealed

The copy of appealed claims 1, 2, 4-9, 12 and 13 contained in the Appendix to the brief is correct.

It is noted that claims 4 and 5 are dependent on canceled claim 3.

The copy of appealed claim 10 is in error. The correct copy of appealed claim 10 appears below:

"10. Process according to claim 7 for the purification of a gas from at least one contaminant selected from hydrogen chloride, hydrogen fluoride, sulphur oxides, nitrogen oxides, dioxins and furans."

(9) Prior Art of Record

6,171,567 B1

FAGIOLINI

Jan. 2001

WO 95/19835

FAGIOLINI

July 1995

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DE 41 00 645 A1

REGLER et al.

July 1992

(10) *Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2, 4-10, 12 and 13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 6,171,567 B1 in view of the English translation of DE 41 00 645 A1.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of 09-423,746 and U. S. Pat. 6,171,567 B1 disclose obvious variations of the same method for cleaning gas with a composition comprising sodium bicarbonate.

The difference between the Applicants' claims and U. S. Pat. 6,171,567 B1 is that Applicants' claim 1 also calls for the presence of either lignite coke, magnesium

oxide, magnesium hydroxide, mixtures of magnesium oxide and magnesium hydroxide and magnesium hydroxycarbonate.

DE 41 00 645 A1 is drawn to the same art of cleaning gas with a composition that may contain not only the sodium bicarbonate of claim 1 of 09-423,746 and claim 1 of U. S. Pat. 6,171,567 but also a secondary component, which may be the same coke, magnesium, oxide, etc recited in the claims of 09-423,746 (please see pg. 4, 2nd, 3rd and 4th full paragraphs and claims 1, 7 and 8 in the English translation of DE 41 00 645 A1). Pg. 4, 5th full paragraph of the English translation of DE 41 00 645 explains that the advantages of (at least the surface active agent (i. e. the coke)) is that numerous other pollutants can also be removed from the gas, such as volatile heavy metals, dioxins, furans, etc.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to *modify* the process and composition disclosed in the claims of U. S. Pat. 6,171,567 by *including* at least one of the coke, magnesium, oxide, etc. disclosed on pg. 4 in the English translation of DE 41 00 645 *into the composition* described in the claims of U. S. Pat. 6,171,567, in the manner called for in the Applicants' claims, because of the expected advantage of removing even more and different kinds of pollutants out of the gas, as fairly taught on pg. 4 in the English translation of DE 41 00 645 A1.

Claims 1, 2, 4-10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over German Patent Doc. No. DE 41 00 645 A1 to Regler et al. in view of WO 95/19835 to Fagiolini.

The English abstract of the Regler et al. application discloses a method for removing sulfur dioxide and hydrogen chloride out of a gas by contacting the gas with a reagent comprising:

- (1) what appears to be at least one component to include NaHCO_3 ; MgO , Mg(OH)_2 , etc. . . , and (optionally)
- (2) an activated charcoal or coke (especially lignite), so that (evidently) the reagent reacts with the sulfur dioxide and hydrogen chloride in the gas to produce a cleaned gas and reaction products, and then (evidently) the reaction products are filtered out of the gas.

The difference between the Applicants' claims and the Regler et al. application is that the Applicants' claims call for using a combination of the sodium bicarbonate and the magnesium compound (whereas, evidently, Regler et al. sets forth the use of a plurality of reagents with the same sodium bicarbonate and magnesium compound being among them), however it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made because the recitation of the same species in the Markush grouping of species in the English abstract of the Regler et al. application renders obvious the use of any combination of the recited species for the same purpose taught in the Regler et al. application.

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The limitations of Applicants' claim 1: ". . . being devoid of silica. . ." and in claim 12: ". . . said composition is devoid of silica which interferes with said purification. . ." are noted but are submitted to be obvious from the Example and also claim 1 of the English translation of DE 41 00 645 A1 which do not require or mention the presence of any of the "surface active substances" mentioned on pg. 4, 4th full paragraph in the English translation of DE 41 00 645 A1 (i. e. activated charcoal, activated coke, for example, brown coal-hearth furnace coke, activated aluminum oxide, silica gel, kieselguhr and/or zeolites). Since neither the independent claim 1 or Example in the English translation of DE 41 00 645 A1 require, mention or suggest the presence of silica in the composition then claim limitations requiring the absence of silica are submitted to be obvious from DE 41 00 645 A1.

The difference between the Applicants' claims and DE 41 00 645 A1 is that Applicants' claims 1 and 13 define the particle size of the composition as having a mean particle size that is less than 50 μ m. and a particle slope that is less than 5.

It appears that the only description of particle size in DE 41 00 645 A1 is set forth on pg. 4, 3rd full paragraph in the English translation where it is set forth that the sodium hydrogen carbonate is used as a "powder" and that the alkaline earth compound is used as a "fine powdery material". There is no evidence of record establishing that there is any difference at all between the Applicants' particle size of mean diameter that is less than 50 μ and DE 41 00 645's particle size that is "powdery" or "fine powdery". *Prima facie*, it would reasonably seem that there is no unobvious difference between the Applicants' particle sizes and the particle sizes of DE 41 00 645 A1, and there is no

evidence establishing otherwise: please see the discussion of the court decisions set forth in section 2145(I) in the MPEP (8th ed.) for further details.

WO 95/19835 is drawn to the same art of cleaning gases with a composition comprising sodium bicarbonate particles and the particle size distribution of the composition is defined by an average particle diameter that is less than 0.050 mm. and a particle size slope that is less than 5 (please see the English abstract). Pg. 4 Ins. 19-21 in WO 95/19835 seem to suggest that this particle size distribution is important for the quality of the composition.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process and composition of DE 41 00 645 A1 by using particles that have a mean particle diameter that is less than 50 μm and a particle slope that is less than 5, in the manner called for in at least Applicants' claims 1 and 13, because the English abstract and pg. 4 Ins. 19-21 in WO 95/19835 seems to suggest that such a granulometry is critical for the quality for the gas cleaning operation.

(11) Response to Argument

- a) *The applicants argue that (regarding the 103 rejection) the references suggest that the person having ordinary skill in the art would include a reagent (i. e. the particular selection of silica gel disclosed on pg. 4 and claim 8 in the English translation of DE 41 00 645 A1 from among the 7 surface active agents disclosed therein to accompany the sodium bicarbonate expressly mentioned on pg. 4 in the English translation of DE 41 00 645 A1 and also in appealed claims 1 and 12) which is*

expressly eliminated from claims 1 and 12. The elimination of an element suggested in the prior art (i. e. the silica gel of DE 41 00 645 A1) with improved results in an area unsuggested by the prior art is the epitome of obviousness.

Before this argument is addressed, a brief review of the claimed invention and the disclosures of the applied references is in order.

The applicants' claimed invention is directed to a process for purifying a gas from HCl, HF, SO_x, etc. by introducing a mixture of sodium bicarbonate and a caking inhibitor into the gas (wherein this mixture does not have any silica) and filtering the resulting solids out of the gas.

The rejection of the claims is essentially based on the disclosure of DE 41 00 645 A1 which discloses the same method for purifying a gas from HCl, SO_x, etc. (please see pg. 1 in the English translation of DE 41 00 645 A1) by introducing a mixture of a basic alkali or alkaline earth compound into the gas (the "sodium bicarbonate" of appealed claims 1 and 12 is mentioned among the 12 basic alkali or alkaline earth compounds reported in claim 6 in the English translation of DE 41 00 645 A1 that may be used) and a surface active substance, which may be brown coal-hearth furnace coke (i. e. the lignite coke of appealed claims 1 and 12): please see claim 8 in the English translation of DE 41 00 645 A1, and also filtering the resulting solids out of the gas (please see pg. 3, 1st full paragraph in the English translation of DE 41 00 645 A1).

With this background, the appellants' arguments can be addressed in proper perspective.

Contrary to the appellants' argument, there is nothing in DE 41 00 645 A1 requiring the particular selection of silica gel from among the 7 "surface active substances" mentioned in claim 8 in the English translation of DE 41 00 645 A1 to accompany the sodium bicarbonate of either claim 6 in the English translation of DE 41 00 645 A1 or in appealed claims 1 and 12. The argument ignored that the lignite coke of their appealed independent claims 1 and 12 is expressly mentioned in claim 8 in DE 41 00 645 A1, and its selection to meet the limitations of claims 1 and 12 is obvious: please see the discussion of the *In re Petering* 301 F.2d 676, 681, 133 USPQ 275, 280 (CCPA 1962) court decision set forth in section 2144.08(II)(A)(4)(a) in the MPEP (Feb. 2003).

Since there is nothing in DE 41 00 645 A1 teaching or suggesting that silica gel must accompany the sodium bicarbonate, then the argument that the elimination of an element suggested in the prior art (i. e. the silica gel of DE 41 00 645 A1) with improved results in an area unsuggested by the prior art is the epitome of obviousness is *not* valid.

b) *The appellants argue that the Regler composition also requires the presence of a nitrogen compound for sorbing nitrogen oxides, and also an additive **including explicitly silica to sorb** certain impurities.*

The "comprising" language of appealed claim 1 does not materially exclude the argued "nitrogen compound for sorbing nitrogen oxides".

While the "consisting essentially of" language of appealed claim 12 materially excludes the "nitrogen compound for sorbing nitrogen oxides" argued to be necessary

for the composition of DE 41 00 645 A1, but the omission of an element from the prior art when its function is no longer needed or desirable has been held to be *prima facie* obvious: please see the discussion of the *Ex parte Wu* 10 USPQ 2031 (Bd. Pat. App. Inter. 1989); *In re Larson* 340 F.2d 965, 144 USPQ 347 (CCPA 1965) and *In re Kuhle* 526 F.2d 553, 188 USPQ 7 (CCPA 1975) set forth in 2144.04(II)(A) in the MPEP (Feb. 2003).

There is no *requirement* that the sodium bicarbonate must include silica as the "surface-active substance" of claim 8 in the English translation of DE 41 00 645 A1.

c) *The appellants argue that in the process of DE 41 00 645 A1 the alkaline earth compound can be the main or only constituent, whereas in the appellants' invention the magnesium compound is a caking inhibitor additive.*

The argued distinction does not exist. Claim 1 in the English translation of DE 41 00 645 A1 specifically sets forth that the "basic substances" may be alkali **and** alkaline earth compounds. Claim 6 in the English translation of DE 41 00 645 A1 clearly sets forth the use of sodium hydrogen carbonate as the "alkali compound" **and** also magnesium oxide, magnesium hydroxide, etc. of appealed claims 1 and 12 as the "alkaline earth metal compound".

d) *The appellants argue that the selection of sodium bicarbonate and a magnesium compound from 6 alkali compounds and 4 alkaline earth compounds amounts to the selection of 2 elements from a list of 10 elements. That is 1 among 90 (10 times 9).*

While it is not entirely clear how the appellants concluded that the selection of 2 elements from a list of 10 elements is statistically equivalent to the selection of 1

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element among 90, the selection of 1 alkali compound from 6 compounds and the selection of 1 alkaline earth metal compound from 4 compounds is *prima facie* obvious: please see the discussion of the *In re Petering* 301 F.2d 676, 681, 133 USPQ 275, 280 (CCPA 1962) court decision set forth in section 2144.08(II)(A)(4)(a) in the MPEP (Feb. 2003).

e) *The appellants argue that in order to arrive at the appellants' claimed invention from DE 41 00 645 A1, one skilled in the art would have to modify the proportions of the selected constituents. By comparison, the appealed claims requires the magnesium additive to present in proportions that are, at most, 10% in weight.*

The proportion of the "caking inhibitor" being present in the composition in amounts that are at most 10 % by weight set forth in appealed claim 1 is noted, but is not any different from the corresponding "surface active agent" present in amounts of 1 to 10 % in the composition reported in claim 9 in the English translation of DE 41 00 645 A1.

f) *The appellants argue that examples 7 and 8 in their specification reveals some very important advantages of avoiding silica.*

The parameters chosen for these 2 examples are not even the same. They have different gas flow rates, different concentrations of HCl, different sodium bicarbonate through-puts, and different stoichiometric ratios - so that it is not entirely clear if the minuscule difference in the degree of gas purification (99.4% for example 7 and 98.1% for example 8) is even attributed to the presence or absence of silica.

g) *The appellants argue that the examiner's reasoning is based on hindsight reasoning.*

In response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

h) *The appellants argue that the applicants' invention is intended to solve an agglutination problem, whereas DE 41 00 645 A1 does not even suggest or mention an agglutination problem.*

The discovery of advantages of not choosing a particular specie from a group of species disclosed in a prior art reference (in this case, avoiding the choice of silica from the 7 "surface-active substances") does not impart patentability to the claims.

i) *The appellants argue that claim 13 is patentable because the final rejection did not rely on any art to describe the claim 13 relationship of distribution of particle size diameters, which defines the "slope" of claim 1. The examiner's comment on pgs. 9 and 10 in the office action filed as paper no. 29 - no differentiation of the terms in claim 1 vis-à-vis the terms of claim 13 are noted. There is no reference provided to show that the*

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qualification of slope is a requirement of a prior art composition. The suggestion of granulometry in WO 95/19835 does not suggest the claim 13 recitations.

Appealed claim 1 sets forth that the particle size slope is less than 5, this is recited in the English abstract of WO 95/19835.

Appealed claim 13 sets forth that the particle size slope is defined by σ where

$$D_{90} - D_{10}$$

$\sigma = \frac{D_{90} - D_{10}}{D_{50}}$, and this (as is recited in the last paragraph on pg. 2 in WO95/19835).

$$\frac{D_{90} - D_{10}}{D_{50}}$$

The same WO 95/19835 mentioned in the appellants' arguments shows the limitation of appealed claim 13.

j) *The appellants argue that the ODP rejection of the claims over U. S. Pat. 6,171,567 B1 in view of the English translation of DE 41 00 645 A1 is in error because the precepts of In re Vogel 422 F2d 438, 164 USPQ 619 and also Studiengessellschaft Kohle mbH vs. Northern Petrochemical Co. 228 USPQ 837 Fed. Cir. 1986 established that the appealed claims (which exclude compositions) the use of which would infringe the reference claims? The claims of a product (appealed claims 1 and 12) are not directed to the same invention as the claims of a process. Two patents that claim different statutory classes of subject matter are not the same invention.*

The argument is not understood in as much as appealed claims 6-10 are directed to a process, and the claims of U. S. Pat. 6,171,567 B1 are also directed to the same statutory class of subject matter - a process.

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Additionally, the inventions of U. S. Pat. 6,171,567 B1 and DE 41 00 645 A1 are directed to the same art of purifying a waste gas.

The appellants' argument appears to be invalid.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

tv

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May 20, 2003

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